

**WHAT IS CLAIMED IS**

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1. A transmission apparatus, comprising:  
an aggregate-side interface unit coupled  
to an optical transmission line;

10 a cross-connect unit which performs cross-  
connect with respect to a synchronized digital  
signal supplied from said aggregate-side interface  
unit; and

15 a network signal processing unit which  
switches the synchronized digital signal in a unit  
of a network signal as the synchronized digital  
signal is supplied from said cross-connect unit.

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2. The transmission apparatus as claimed  
in claim 1, wherein said network signal processing  
unit includes:

25 a network signal extracting unit which  
extracts a network signal from the synchronized  
digital signal supplied from said cross-connect  
unit;

a network signal switching unit which  
switches the extracted network signal; and

30 a mapping unit which maps the network  
signal switched by said network signal switching  
unit onto a synchronized digital signal for  
transmission to said cross-connect unit.

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3. The transmission apparatus as claimed  
in claim 1, further comprising a tributary-side  
interface unit which is connected to said cross-  
connect unit, and interfaces one of an asynchronous  
5 digital signal and a network signal.

10 4. The transmission apparatus as claimed  
in claim 2, wherein said network signal processing  
unit further includes an add/drop unit which drops  
the network signal supplied from said network signal  
switching unit, and adds a network signal supplied  
15 from an exterior to said network signal switching  
unit.

20 5. The transmission apparatus as claimed  
in claim 2, wherein said network signal processing  
unit further includes a flow monitoring and  
adjusting unit which monitors and adjusts an amount  
25 of flow of the synchronized digital signal supplied  
from said cross-connect unit.

30 6. The transmission apparatus as claimed  
in claim 3, wherein said tributary-side interface  
unit extracts one of an asynchronous digital signal  
and a network signal from a synchronized digital  
35 signal supplied from said cross-connect unit for  
dropping to an exterior, and adds one of an  
asynchronous digital signal and a network signal

supplied from the exterior.

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7. The transmission apparatus as claimed in claim 1, wherein said network signal processing unit performs ring switching in a LAN by use of a RPR (resilient packet ring) function.

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8. The transmission apparatus as claimed in claim 1, wherein the synchronized digital signal is one of an SONET signal and an SDH signal.

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9. The transmission apparatus as claimed in claim 1, wherein the network signal is a RPR signal.

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10. The transmission apparatus as claimed in claim 9, wherein said cross-connect unit and said network signal processing unit are connected through RPR signals.

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